DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A46NM
Revision 3
Airbus Industrie
A330-202
A330-301
A330-223
A330-321
A330-322
A330-323

October 21, 1999

FAA TYPE CERTIFICATE DATA SHEET NO. A46NM

This data sheet which is part of Type Certificate No. A46NM prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the US Federal Aviation Regulations.

Type Certificate Holder: Airbus Industrie
1, Rond-Point Maurice Bellonte
31707 Blagnac
France

I. Type A330-200 Series Transport Category Airplanes:

Airbus A330-202 - approved March 31, 1998:
Airbus A330-223 - approved June 21, 1999:

A330-202: Definition of reference airplane by Airbus Industrie Documents: FAA A330-202 Type Design, ref. AI/EA-N 415.0531/98 Issue 3, dated May 25, 1998, for type definition and Type Certification Standard Equipment List, ref. 00G000A0102/C0S.

A330-223: Definition of reference airplane by Airbus Industrie Documents: FAA A330-223 Type Design, ref. AI/EA-N 415.1223/98 Issue 2, dated August 20, 1998, for type definition and Type Certification Standard Equipment List, ref. 00G000A0123/C0S.

Engines:

Airplane Model	Engine Model	Engine Type Certificate
A330-202	Two GE-CF6-80E1A4 turbojet engines	FAA-Type Certificate E41NE
A330-223	Two PW 4168A turbojet engines	FAA-Type Certificate E36NE

Fuel:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

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Engine Limits:

Engine Limitations	A330-202 CF6-80E1A4 FAA Data Sheet E41NE	A330-223 PW 4168A FAA Data Sheet E36NE
Static Thrust at Sea Level • Take-off (5 mn)[1] (flat rated 30º C) • maximum continuous (flat rated 25º C)	 66,870 lbs 60,400 lbs	 68,600 lbs 59,357 lbs
Maximum Engine Speed • N1 rpm (%) • N2 rpm (%)	 3,835 (115.5%) 11,105 (113%)	 3,600 10,450
Maximum Gas Temperature • Take-off (5mn)[1] • Maximum Continuous • Starting[2]	 1,787º F (975º C) 1,724º F (940º C) 1,598º F (870º C)	 1,157º F (625º C) 1,112º F (600º C) 1,148º F (620º C)
Maximum Oil Temperature (Supply Pump Outlet) ºC • Continuous Operation • Transient (15 mn max.) • Minimum Oil Pressure (PSI)	 320º F (160º C) 347º F (175º C) 10.0 psid (69 KPa)	 325º F (163º C) 350º F (177º C) 70.0 psid (482.6 KPa)
Approved oils	Brand Names: See GE Service Bulletin 79-001 Specification: See GE specification D50TF1, Class B	Oils conforming to P&W Turbojet engine Service Bulletin 238, latest revision.

Table references:
(1) 10 minutes at take-off thrust allowed only in case of engine failure (at take-off or during go around).
(2) 4 consecutive cycles of 2 minutes each.

Airspeed Limits (Indicated Airspeed, IAS, unless otherwise stated):

- Maximum Operating Limit Speed/Mach, V_{MO}/M_{MO} 360 KIAS / .86 M
- Design Diving Speed, V_D 365 KIAS / .93 M
- Design Maneuvering Speed, V_A Refer to AFM Limitations Section
- Maximum Flaps/Slats Extended Speed or Operating Speed, V_{FE}:

Configuration	Slats/Flaps/Ailerons º	V_{FE} (kt)	
1	16/0/0	240	Intermediate Approach
	16/8/0	215	Take-off
1 + F	16/8/5	205	Take-off
2	20/14/10	196	Take-off and Approach
3	23/22/10	186	Take-off, Approach, and Landing
FULL	23/32	180	Landing

• Minimum Control Speed, V_{MC} Refer to AFM Performance Section (Performance Engineering Program/OCTOPUS)

Landing Gear Speeds:

• Maximum Speed with Landing Gear Operating (Extension and Retraction), V_{L0} 250 KIAS/.55M
• Maximum Speed with Landing Gear Locked Down, V_{LE} 250 KIAS/.55M
• Tire Limit Speed (Ground Speed) 203 KIAS (235mph)

Center of Gravity Limits:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Datum:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Leveling Means:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Maximum Weight:

Variant	020 (Basic) kg/lb
Maximum Take-off Weight, MTOW	230,000/507, 150
Maximum Landing Weight, MLW	180,000/396,900
Maximum Zero Fuel Weight, MZFW	168,000/370,440

Minimum Crew:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Number of Seats:
The maximum number of passengers approved for emergency evacuation is:
375 passengers with a 3 pairs of Type A and 1 pair Type 1 exits configuration, and
379 passengers with a 4 pairs of Type A exits configuration.

Maximum Baggage:

Cargo Compartment	Maximum Load (kg/lb)
Forward	18,869/41,606
Aft	15,241/33,606
Rear	3,468/7,646

For the positions and the loading conditions authorized in each position (references of containers, pallets and associated weight) see weight and Balance Manual: Airbus Industrie Document 00G080A0006/C2S for A330-200 airplanes.

Fuel Capacity:

	3 Tank Airplane			
	Usable Fuel		Unusable Fuel	
Tank	liters	gallons	liters	gallons
Wing	91,300	24,121	348	70
Center	41,560	10,980	83	21.9
Trim Tank	6,230	1,646	6	1.6
Total	139,090	36,746	437	115.5

Maximum Operating Altitude:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Control Surface Movements:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Manufacturer's Serial Numbers:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Import Requirements:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Certification Basis (A330-200):
a. Part 25 of the FAR effective February 1, 1965, including the following:
- Amendments 25-1 through 25-63, amendments 25-65, 25-66, 25-68, 25-69, 25-73, 25-75, 25-77, 25-78, 25-81, 25-82, 25-84 and 25-85
- § 25.851 as amended by amendment 25-74
- The following sections of Part 25 of the FAR as amended through amendment 25-72:

FAR 25.21
FAR 25.29
FAR 25.111
FAR 25.147
FAR 25.177
FAR 25.181
FAR 25.205
FAR 25.307
FAR 25.331
FAR 25.341
FAR 25.343
FAR 25.345
FAR 25.351
FAR 25.361
FAR 25.373
FAR 25.395
FAR 25.397
FAR 25.415
FAR 25.459
FAR 25.571 (b)
FAR 25.613 (Vertical stabilizer only)
FAR 25.615 (Vertical stabilizer only)
FAR 25.693
FAR 25.723
FAR 25.729
FAR 25.731
FAR 25.733
FAR 25.735
FAR 25.772
FAR 25.779
FAR 25.783
FAR 25.933
FAR25.979
FAR 25.1093
FAR 25.1381
FAR 25.1419
FAR 25.1522
FAR 25.1533
FAR 25.1543
FAR 25.1551
FAR 25.1581
FAR 25.1583
FAR 25.1587

b. Part 25 of the FAR amendment 25-64 with the following exceptions:
   - Cockpit seats will not meet FAR 25.562 amendment 25-64 but will meet FAR 25.561
   - Compliance with 25.785(a), (b), and (c) at amendment 25-64 for front row seats in front of a bulkhead will be based on ensuring a 35 inch free head strike envelope.

c. In accordance with § 21.16 of the FAR, the following special conditions are part of the original A330 certification basis, and were published in the Federal Register April 15, 1993, (Docket No. NM-75, Special Conditions No. 25-ANM-69), and are also be part of the A330-200 certification basis:

   (1) Operation without Normal Electrical Power
   (2) Electronic Flight Control System (EFCS) failures and Mode Annunciation
   (3) Command Signal Integrity
   (4) Protection From Lightning and Unwanted Effects of High Intensity Radiated Fields (HIRF)
   (5) Interaction of Systems and Structures
   (6) Design Dive Speed
   (7) Design Maneuver Requirements
   (8) Limit Pilot Forces
   (9) Tail plane Tank Emergency Landing Loads
   (10) Limit Engine Torque
   (11) Flight Characteristics
   (12) Flight Envelope Protection
   (13) Side Stick Controllers
   (14) Computerized Airplane Flight Manual (AFM) Performance Information

d. Part 34 of the FAR, effective September 10, 1990, including Amendment 34-1.

e. Part 36 of the FAR, effective December 1, 1969, including Amendments 36-1 through 36-21.

f. The technical requirements are complemented by the following guidance material:
   For precision approach and landing,
   1. AC 120-29
   2. AC 120-28C

   and for the automatic flight control system
   1. AC 20-57A for automatic landing
   2. AC 25.1329-1A for cruise

g. Equivalent safety findings have been made in accordance with FAR 21.21(b)(1) for the following paragraphs of the FAR:

   (1) 25.335(d) for design airspeeds
   (2) 25.345 for high lift devices
   (3) 25.349 for control surface loads
   (4) 25.351(b) for unsymmetrical loads
   (5) 25.371 for gyroscopic loads
   (6) 25.373 for speed control devices
   (7) 25.101(I); 25.105(c)(1); 25.109(a)(b)(c)(d)(e)(f); 25.113(a)(b)(c); 25.115(a); 25.735(f)(g)(h)(b) for rejected takeoff and landing performance
   (8) 25.933(a)(1)(ii), 25.1309(b)(1) for flight critical thrust reverser

h. Optional requirements elected:
   - 25.801 for ditching.
   - 25.1419 for icing.

Production Basis:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Equipment:

- The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification.
- The following Airbus Industrie Documents defines the set of modifications which comprise the FAA certificated type design. These documents contains certain modifications determined necessary for FAA certification, including installation of ozone converters, fuel system improvements and thrust reverser modifications.
    - AI/EA-N 415.0531/98 Issue 3, dated May 25, 1998 for the A330-202
    - AI/EA-N 415.1223/98 Issue 2, dated August 20, 1998 for the A330-223
- Equipment approved for installation is listed in the Certification Standard Equipment List
    - 00G000A0102/C0S for the A330-202.
    - 00G000A0123/C0S for the A330-223.
- Cabin furnishings, equipment and arrangement shall conform to the following specification:
    - 00F252K0005/C01 for cabin seats.
    - 00F252K0006/C01 for galley.
    - 00F252K0020/C01 for cabin attendant seats

Other Information Applicable to A330-200 Series Airplanes:

Hydraulic Fluids:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Auxiliary Power Unit (APU):
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Tires:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Airplane Flight Manual:
Airplane operation must be in accordance with the DGAC-Approved Airplane Flight Manual (AFM), US version, listed below, applicable to the specific airplane model and serial number.

Model A330 Aircraft	Airbus Industrie Document Refr.	Revision No.	Date
-202	AI/ST-F 33000	2	January 6, 1999
-223	AI/ST-F 33000	2	January 6, 1999

Service and Operating Information:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Notes:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

II. Airbus A330-300 Series Transport Category Airplanes:

Airbus A330-301 - approved October 21, 1993:
Airbus A330-321 - approved June 21, 1999:
Airbus A330-322 - approved June 21, 1999:
Airbus A330-323 - approved October 8, 1999:

A330-301: Definition of reference airplane by Airbus Industrie Document: AI/EA-N 415.1181/96 Issue 3, dated July 16, 1997 for type definition and 00G000A0101/C0S for equipment list.

A330-321: Definition of reference airplane by Airbus Industrie Document: AI/EA-N 415.1184/96 Issue 3, dated June 25, 1998 for type definition and 00G000A0121/C0S for equipment list.

A330-322: Definition of reference airplane by Airbus Industrie Document: AI/EA-N 415.1183/99 Issue 3, dated June 25, 1998 for type definition and 00G000A0121/C0S for equipment list.

A330-323: Definition of reference airplane by Airbus Industrie Document: AI/EA-N 415.1630/99 Issue 1, dated July 20, 1999 for type definition and 00G000A0123/C3S for equipment list.

Engines:

Airplane Model	Engine Model	Engine Type Certificate
A330-301	Two GE-CF6-80E1A2 turbojet engines	FAA-Type Certificate E41NE
A330-321	Two PW 4164 turbojet engines	FAA-Type Certificate E36NE
A330-322	Two PW 4168 turbojet engines	FAA-Type Certificate E36NE
A330-323	Two PW 4168A turbojet engines	FAA-Type Certificate E36NE

Fuel:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Engine Limits:

Engine Limitations	A330-301 CF6-80E1A2 FAA Data Sheet E41NE	A330-321 PW 4164 FAA Data Sheet E36NE	A330-322 PW 4168 FAA Data Sheet E36NE	A330-322 PW 4168 FAA Data Sheet E36NE
Static Thrust at Sea Level				
• Take-off (5 mn)[1] (flat rated 30º C)	64,530 lbs	64,500 lbs	68,600 lbs	68,600 lbs
• maximum continuous (flat rated 25º C)	60,040 lbs	55,800 lbs	59,357 lbs	59,357 lbs
Maximum Engine Speed				
• N1 rpm (%)	3,835 (115.5%)	3,600 (101%)	3,600 (101%)	3,600 (101%)
• N2 rpm (%)	11,105 (113%)	10,450 (103%)	10,450 (103%)	10,450 (103%)
Maximum Gas Temperature				
• Take-off (5mn)[1]	1,787º F (975º C)	1,157º F (625º C)	1,157º F (625º C)	1,157º F (625º C)
• Maximum Continuous	1,724º F (940º C)	1,112º F (600º C)	1,112º F (600º C)	1,112º F (600º C)
• Starting[2]	1,598º F (870º C)	1,148º F (620º C)	1,148º F (620º C)	1,148º F (620º C)

Engine Limitations (cont'd)	A330-301 CF6-80E1A2 FAA Data Sheet E41NE	A330-321 PW 4164 FAA Data Sheet E36NE	A330-322 PW 4168 FAA Data Sheet E36NE	A330-322 PW 4168 FAA Data Sheet E36NE
Maximum Oil Temperature (Supply Pump Outlet) ºC • Continuous Operation • Transient (15 mn max.) • Minimum Oil Pressure (PSI)	 320º F (160º C) 347º F (175º C) 10.0 psid (69 KPa)	 325º F (163º C) 350º F (177º C) 70.0 psid (482.6 KPa)	 325º F (163º C) 350º F (177º C) 70.0 psid (482.6 KPa)	 325º F (163º C) 350º F (177º C) 70.0 psid (482.6 KPa)
Approved oils	See SB CFMI 79-001 or GE specification D50TF1 Class B	See P&W Service Bulletin 238, latest revision.		

Table references:
(1) 10 minutes at take-off thrust allowed only in case of engine failure (at take-off or during go-around).
(2) 4 consecutive cycles of 2 minutes each

Airspeed Limits (Indicated Airspeed, IAS, unless otherwise stated):

- Maximum Operating Limit Speed/Mach, V_{MO}/M_{MO} 360 KIAS /.86
- Design Diving Speed, V_D 365 KIAS / .93
- Design Maneuvering Speed, V_A Refer to AFM Performance Section
- Maximum Flaps/Slats Extended Speed or Operating Speed, V_{FE}

Configuration	Slats/Flaps/Ailerons º	V_{FE} (kt)	
1	16/0/0	240	Intermediate Approach
	16/8/0	215	Take-off
1 + F	16/8/5	205	Take-off
2	20/14/10	196	Take-off and Approach
3	23/22/10	186	Take-off, Approach, and Landing
FULL	23/32	180	Landing

- Minimum Control Speed, V_{MC} Refer to AFM performance Section. (Performance Engineering Program/OCTOPUS)

Landing Gear Speeds:

- Maximum Speed with Landing Gear Operating (Extension and Retraction) V_{LO} 250 KIAS/.55M
- Maximum Speed with Landing Gear Locked Down, V_{LE} 250 KIAS/.55M
- Tire Limit Speed (Ground Speed) 203 KIAS(235mph)

Center of Gravity Limits:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Datum:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Leveling Means:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Maximum Weight:

Model A330 Airplane	A330-301/-321/-322			A330-323
Weight Varient	000 (Basic) kg/lb	001 (MOD 42200) kg/lb	002 (MOD 42600) kg/lb	020 (Basic) kg/lb
Maximum Take-off Weight, MTOW	212,000/467,460	184,000/405,720	212,000/467,460	230,000/507,064
Maximum Landing Weight, MLW	174,000/383,670	174,000/383,670	177,000/390,285	185,000/407,856
Maximum Zero Fuel Weight, MZFW	164,000/361,620	164,000/361,620	167,000/368,235	173,000/381,400

Minimum Crew:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Number of Seats:
The maximum number of passengers approved for emergency evacuation is:
375 passengers with a 3 pair Type A and 1 pair Type 1 exit configuration, and
379 passengers with a 4 pair Type A exit configuration.

Maximum Baggage:

Cargo Compartment	Maximum Load (kg/lb)
Forward	22,861/50,400
Aft	18,507/40,800
Rear	3,468/7,646

For the positions and the loading conditions authorized in each position (references of containers, pallets and associated weight) see Weight and Balance Manual Ref. 00G080A0006/C3S for A330-300 airplanes.

Fuel Capacity:

	Two Tank Airplane					
	Useable Fuel				Unusable fuel	
Model	A330-301/-321/-322		A330-323		All Models	
Tank	liters (kg)	gallons (lb)	liters (kg)	gallons (lb)	liters (kg)	gallons (lb)
Wing	91,056 (72,845)	24,054 (164,052)	91,764 (73,411)	24,241 (165,327)	348 (278)	70 (41)
Trim Tank	6,115 (4891)	1,614 (11,008)	6,121 (4897)	1,617 (11,028)	6 (4.8)	1.6 (11)
Total	97,171	25,669	97,885	25,858	354	88

Maximum Operating Altitude:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Control Surface Movements: *(Total one-way travel in each direction of each movable control surface on the aircraft.)*
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Manufacturer's Serial Numbers:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Import Requirements:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Certification Basis (A330-300):

a. Part 25 of the FAR effective February 1, 1965, including the following:
- Amendments 25-1 through 25-63, amendments 25-65, 25-66, 25-77

b. Part 25 of the FAR amendment 25-64 with the following exceptions:
- Cockpit seats will not meet FAR 25.562 amendment 25-64 but will meet FAR 25.561
- Compliance with 25.785(a), (b), and (c) at amendment 25-64 for front row seats in front of a bulkhead will be based on ensuring a 35 inch free head strike envelope.

c. FAA Special conditions issued for the A330 in accordance with Section 21.16 of the FAR and published in the Federal Register April 15, 1993, (Docket No. NM-75, Special Conditions No. 25-ANM-69), as follows:

(1) Operation without Normal Electrical Power
(2) Electronic Flight Control System (EFCS) failures and Mode Annunciation
(3) Command Signal Integrity
(4) Protection From Lightning and Unwanted Effects of High Intensity Radiated Fields (HIRF)
(5) Interaction of Systems and Structures
(6) Design Dive Speed
(7) Design Maneuver Requirements
(8) Limit Pilot Forces
(9) Tail plane Tank Emergency Landing Loads
(10) Limit Engine Torque
(11) Flight Characteristics
(12) Flight Envelope Protection
(13) Side Stick Controllers
(14) Computerized Airplane Flight Manual (AFM) Performance Information

d. Special Federal Aviation regulation FAR Part 34, effective September 10, 1990.

e. Part 36 of the FAR as amended by amendments 36-1 through 36-20.

f. The technical requirements are complemented by the following guidance material:
For precision approach and landing,
1. AC 120-29
2. AC 120-28C

and for the automatic flight control system
1. AC 20-57A for automatic landing
2. AC 25.1329-1A for cruise

g. Equivalent safety findings have been made in accordance with FAR 21.21(b)(1) for the following paragraphs of the FAR:

(1) 25.335(d) for design airspeeds
(2) 25.345 for high lift devices
(3) 25.349 for control surface loads
(4) 25.351(b) for unsymmetrical loads
(5) 25.371 for gyroscopic loads
(6) 25.373 for speed control devices
(7) 25.101(I); 25.105(c)(1); 25.109(a)(b)(c)(d)(e)(f); 25.113(a)(b)(c); 25.115(a); 25.735(f)(g)(h)(b) for rejected takeoff and landing performance
(8) 25.933(a)(1)(ii), 25.1309(b)(1) for flight critical thrust reverser

h. Optional requirements elected:
- 25.801 for ditching.
- 25.1419 for icing.

Production Basis:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Equipment:
- The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification.
- The following Airbus Industrie Documents defines the set of modifications which comprise the FAA certificated type design. This document contains certain modifications determined necessary for FAA certification, including installation of ozone converters, fuel system improvements and thrust reverser modifications.
  - AI/EA-N 415.1181/96 Issue 3, dated July 16, 1997 for the A330-301
  - AI/EA-N 415.1184/96 Issue 3, dated June 25, 1998 for the A330-321
  - AI/EA-N 415.1183/96 Issue 3, dated July 25, 1998 for the A330-322
  - AI/EA-N 415.1630/99 Issue 1, dated July 20, 1999 for the A330-323
- Equipment approved for installation is listed in the Certification Standard Equipment List
  - 00G000A0101/C0S for the A330-301.
  - 00G000A0121/C0S for the A330-321 and -322.
  - 00G000A0123/C3S for the A330-323.
- Cabin furnishings, equipment and arrangement shall conform to the following specification:
  - 00F252K0005/C01 for cabin seats.
  - 00F252K0006/C01 for galley.
  - 00F252K0020/C01 for cabin attendant seats

Other Information Applicable to A330-300 Series Airplanes:

Hydraulic Fluid:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Auxiliary Power Unit (APU):
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Tires:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Airplane Flight Manual:
Airplane operation must be in accordance with the DGAC-Approved Airplane Flight Manual (AFM), US version, listed below, applicable to the specific airplane model and serial number.

Model A330 Aircraft	Airbus Industrie Document Refr.	Revision No.	Date
-301	AI/EV-O 33000	3	January 6, 1999
-321, -322	AI/ST-F 33000	2	January 6, 1999
-323	AI/ST-F 33000	1	October 5, 1999

Service and Operating Information:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

Notes:
See Section III, Data pertinent to All A330-200 and A330-300 Models.

III. Data Pertinent to All A330-200 and A330-300 Models:
Fuel:

		Specification		
Aircraft	Nomenclature	United States	France	United Kingdom
A330-202 A330-301	Kerosene (conform to GE specification D50TF2 with current exception of JP4 and JET B)	ASTM D 1655 (JET A) (JET A1)	AIR 3405C	DERD 2494/2453
A330-223 A330-321 A330-322 A330-323	Fuel and fuel additives conforming to the latest applicable issue of FAA approved Pratt & Whitney Turbojet Engine Service Bulletin 2016 may be used separately or mixed in any proportions without adversely affecting the engine operation or power output.			

(a) Additives: According to GE "Specific Operating Instructions", installation manual. The above mentioned fuels are also suitable for the APU.

Center of Gravity Limits:
Refer to DGAC-Approved Airplane Flight Manual, US Version, Limitations Section for center of gravity envelope.
Note: 0% MAC is located 1359.59 in. (34.532m) from the datum line

Datum:
The aircraft reference zero datum point is located 251.29 in. (6.3825 m) forward of the nose section, 275.6 in. (7m) under the fuselage centerline (datum line).

Leveling Means:
Inclinometer on cabin seat track rails (refer to WBM chapter 1.80).

Minimum Crew:
2 - Pilots

Maximum Operating Altitude
• 41,100 feet (12,496 m) slats and flaps retracted (clean)
• 20,000 feet (6,096 m) Slats or, Slats/Flaps extended.

Control Surface Movements: *(Total one-way travel in each direction of each movable control surface on the aircraft.)*

Control Surface	**Maximum Travel**
Aileron	+25 /- 25º
#1 Spoilers	Speed Brake 23º
	Lift Dumper 35º
#2,3 Spoilers	Roll 35º
	Speed Brake 30º
	Lift Dumper 50º
#4,5,6 Spoilers	Roll 35º
	Speed Brake 30º
	Lift Dumper 50º
Aileron Droop	10º
Flaps	32º
Slats	23º
Stabilizers	+2º/-14º
Elevator	+15º/-30º
Rudder	+30º/-30º

Manufacturer's Serial Numbers/Production Basis:
A330 aircraft, all series and models, are produced in France under production approval FG 035 issued by the DGAC (on behalf of JAA) to Airbus Industrie.

Import Requirements
To be considered eligible for operation in the United States, each aircraft manufactured under this certificate must be accompanied by a certificate of airworthiness for export or certifying statement endorsed by the exporting foreign civil airworthiness authority which states (in the English language): "The aircraft covered by this certificate has been examined, tested, and found to conform to the Type Design approved under Type Certificate No. A46NM and to be in condition for safe operation."

The regulatory basis U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 and exported by the country of manufacture is FAR Sections 21.183(c) or 21.185(c). The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 exported from countries other than the country manufacture (e.g., third party country) is FAR Sections 21.183(d) or 21.183(b). These sections provide that U.S. airworthiness certificates are issued only if the Administrator finds "that the aircraft conforms to the type design and is in a condition for safe operation."

In order for the FAA to make the finding that an A330 aircraft is in a condition for safe operation, the FAA certificating inspector or other authorized person must contact the Manager, International Branch, ANM-116, FAA Transport Airplane Directorate; 1601 Lind Avenue Southwest; Renton, Washington 98055; telephone (425) 227-2196; fax (425) 227-1149, prior to issuance of the U.S. airworthiness certificate to obtain the FAA Required Modification List (RML) for the A330. Compliance with the one time modifications identified in the RML for the A330 is required in the interest of safety and is necessary for an A330 aircraft to be found in a condition for safe operation.
Additional guidance is contained in FAA advisory Circular 21-23, Airworthiness Certification of Civil Aircraft, Engines, Propellers, and Related Products Imported into the United States.

Hydraulic Fluids:
Type IV - Specification NSA 30.7110

Auxiliary Power Unit (APU):

Garrett Airesearch	GTCP 331-350C (Specification 31-7677A)
Maximum Allowable Speed	(107%) 41,730 RPM
Maximum Gas Temperature: Turbine Outlet Temperature Starting	 650 °C 1250 °C

Approved oils: See Garrett report GT-7800 or Garrett Maintenance Manual.

Tires:
Refer to Airbus Industrie Service Bulletin (SB) A330-32-3004.

Service and Operating Information:
• Service and repair instructions (bulletins, letters, etc...), the structural repair manual, aircraft flight manual, and overhaul and maintenance manuals which contain a statement that the document is DGAC approved are accepted by the FAA and are considered as FAA approved. These approvals pertain to the type design only.

• Service Bulletins which have been approved under the authority of DGAC Design Organization Approval No. C01 (or, since Nov. 1996, approved under the authority of JAA Design Organization Approval No. F.JA.02), constitute DGAC approval and, therefore, FAA approval. The changes specified in the Service Bulletin have been approved by the DGAC when they are major, or under the authority of DGAC Design Organization Approval No.C01/F.JA.02 when they are minor. These approvals pertain to the type design only.

• Airplane operation must be in accordance with the DGAC-Approved Airplane Flight Manual (AFM), US version, listed below, applicable to the specific airplane model and serial number.

Model A330 Aircraft	Airbus Industrie Document Refr.	Revision No.	Date
-202	AI/ST-F 33000	2	January 6, 1999
-223	AI/ST-F 33000	2	January 6, 1999
-301	AI/EV-O 33000	3	January 6, 1999
-321, -322	AI/ST-F 33000	2	January 6, 1999
-323	AI/ST-F 33000	1	October 5, 1999

• Weight & Balance Manual - Refer to Airbus Industrie Documents 00G080A0006/C2S for A330-200 series aircraft and 00G080A0006/C3S for A330-300 series aircraft. See Note 1 for information on Weight and Balance.

See Note 3 for reference to the Instructions for Continued Airworthiness required under § 21.50 for service life limits on components, required inspections and inspection intervals, and certification maintenance requirements.

Notes:

Note 1: A current Weight and Balance report including list of the equipment included in the certificated empty weight, and loading instructions, when necessary, must be provided for each aircraft at the time of original airworthiness certification and at all times thereafter.

Note 2: Airplane operation must be in accordance with the applicable FAA approved Airplane Flight Manual. All placards required by either the FAA approved AFM, the applicable operating rules, or the certification basis must be installed in the airplane.

Note 3: Instructions For Continued Airworthiness:

• The Maintenance Review Board (MRB) report, issue date March 1998, is approved by the FAA (refr. Airbus Industrie Document 00G050A0002/C01).

• Component Life Limitations are provided in chapter 05, “Time Limits and Maintenance Checks”, of the A330 Aircraft Maintenance Manual (AMM), approved by the DGAC.

• Maintenance tasks to comply with Certification Maintenance Requirements (CMR's) for systems are listed in the A330 Certification Maintenance Requirements, Airbus Industrie Document 955.2074/93, Issue 10, dated April 1999, which is included as Appendix 1a of the MRB report.

• Fatigue related structural inspections to comply with the damage tolerance requirements of the type certification are listed in the A330 Airworthiness Limitation Items , Airbus Industrie Document SE-M4/95A.0089/97, Issue 5, dated April 1999, which is included as Appendix 1b of the MRB report.

Note 7: ETOPS for the A330-323: The Type Design reliability and performance of this airframe-engine combination has been evaluated in accordance with AC 120-42A and found suitable for (180 minute maximum diversion time) Extended Range Operations with the incorporation of the approved airplane configuration CMP document (AI/EA5001, Revision 01, **Note 4:** A330-301: If modification 42792, “Autoflight-FMGEC-Introduce L5 Standard on A330 Aircraft,” is embodied the aircraft is qualified for CAT III precision approach and autoland. This does not constitute operational approval.

Note 5: A330-321 and A330-322: If modification 43397, “Autoflight-FMGEC-Certify CAT III Autoland for A330 with P&W engines,” is embodied, the aircraft is qualified for CAT III precision approach and autoland. This does not constitute an operational approval.

Note 6: A330-202, A330-223 and A330-323: The aircraft Type Design is qualified for CAT III precision approach and autoland. This does not constitute an operational approval.
dated October 21, 1999). This finding does not constitute approval to conduct extended range operations.

...END...